

1. A particulate matter vibro-fluidizing apparatus having vibrating means and means for treating the particulate matter, said means for treating the particulate matter comprising a set of different types of vibrating bodies operating in cooperation with said vibrating means, wherein said particulate matter is fluidization-treated by a cooperative vibrating action occurring between said different types of vibrating bodies.

3. The particulate matter vibro-fluidizing apparatus of claim 1 or 2, wherein the cooperation of the different vibrating bodies of the vibrating means comprises cooperation where the vibrating means is coupled with one of the vibrating bodies, and cooperation where the other vibrating body receives vibrations from the one vibrating body.

5. The particulate matter vibro-fluidizing apparatus of any one of claims 2 to 4, wherein the vibrating medium is a porous plate.

6. The particulate matter vibro-fluidizing apparatus of any one of claims 2 to 4, wherein the vibrating medium is an aggregate comprising a plurality of spherical bodies.

7. A particulate matter vibration treatment apparatus having vibrating means and means for treating the particulate matter, said means for treating the particulate matter comprising: a container operating in cooperation with said vibrating means; and amplifying means for amplifying vibrations of the container;

wherein said particulate matter within the container is to be vibration-treated by a vibrating action caused by said amplifying means.

8. The particulate matter vibration treatment apparatus of claim 7, wherein the vibrating means cooperates in such a manner as to apply vertical vibrations to the bottom part of the container.

9. The particulate matter vibration treatment apparatus of claim 7 or 8, wherein the vibration action comprises a cooperative vibration action of vibration due to the amplifying means and vibration of the container.

10. The particulate matter vibration treatment apparatus of any one of claims 7 to 9, said amplifying means comprising:

a plate being provided inside said container spaced away from the bottom of the container; and

floating bodies being provided between said plate and the container so as to collide with said plate.

11. The particulate matter vibration treatment apparatus of claim 10, wherein the plate is comprised of a rubber sheet, a metal material or a resin material.

12. The particulate matter vibration treatment apparatus of claim 8 or 9, wherein the floating bodies are constituted by a plurality of spherical bodies made of metal, resin or rubber.

13. The particulate matter vibration treatment apparatus of any one of claims 7 to 12, wherein the particulate matter treatment means is used within a vacuum.